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09/904,486	07/13/2001	Teemu Parkkinen	297-010462-US(PAR)	6061

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EXAMINER	
NGUYEN, HANH N	
ART UNIT	**PAPER NUMBER**
2668	

DATE MAILED: 10/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.**	**Applicant(s)**	
	09/904,486	PARKKINEN ET AL.	
	Examiner	**Art Unit**	
	Hanh Nguyen	2668	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Amendment filed on 7/13/05*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,9,13-18,22,24,25,32 and 33* is/are rejected.

7)☒ Claim(s) *6-8,10-12,19-21,23,26-31,34 and 35* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

HNguyen

HANH NGUYEN
PRIMARY EXAMINER

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/21/01,5/21/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 9, 13-18, 22, 24, 25 32 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Haskell et al. (US Patent Number: 5,742,343), hereinafter referred to as Haskell.

Regarding claims 1, 24 and 33, Haskell teaches a scalable encoder (Figure 1, col. 4, line 59; a scalable encoder) for encoding the high resolution video (Figure 1,col. 5., line 1; for encoding a media signal) comprising;

- A Base Encoder c3140 (Figure 1; col. 5, line 6; first encoding means for producing a first data stream), which outputs a variable bit-rate coded bit-stream on Bus c3230 (Figure 1; col. 5; lines 6-7; a core data stream relating to the media signal, having a first bit-rate);

-An Enhancement Encoder c3180 (Figure 1 ; col. 5, line 12; second encoding means for producing a second data stream) which outputs a variable bit-rate coded bit-stream on Bus c3250 (Figure 1; col. 5;lines 13-14; which comprises a set of enhancement data streams relating to the media signal having a second bit-rate);

- A System Multiplexer c3250 (Figure 1; col. 5; lines 49-50; a multiplexer) which combines the two bit streams (Figure 1, col. 5; lines 50-51; for combining at least the first data stream and the second data stream) in preparation for transmission on Channel c3260 (Figure 1; col. 5, lines 50-51; a third data streaml); and

-Control means which resides within the Base Encoder c3140 and the Enhancement Encoder c3180 (Figure 1; col. 5; lines 25-30; control means, which is arranged to receive control information). The fullness signal from Buler c3190 appearing on Bus c3200 passes to both the Base Encoder c3140 and the Enhancement Encoder c3180 (Figure 1; col. 5; lines 28-30; to determine the first data stream in the third data stream). Base Encoder c3140 utilizes this fullness signal to control the data flow into Buffer c3190 according to any method of controlling data flow well known in the art (Figure 1; col. 5, lines 31-33; accordinq to the control information and to adiust the combination of the first data stream in the third data stream). The fullness signal from Bufer c3210 appearing on Bus c3225 passes to Enhancement Encoder c3180 (Figure 1; col.5, lines 34-35; to determine the 2nd data stream in the third data stream). The Enhancement Encoder c3180 utilizes buffer fullness signals, c3200 and c3225, in controlling the data flow into Buffer c3210 (Figure 1; col. 5; lines 40-42; according to the control information and to adiust the second data stream in the third data stream).

Regarding claim 2, Haskell teaches the Base Encoder c3140 (Figure 1; col. 5, line 6; the first encoding means) outputs a variable bit-rate coded bit-stream on Bus c3230 (Figure 1; col. 5; lines 6-7; the-first encoding means is variable rate encoding means).

Regarding claim 3, Haskell teaches the fullness signal (Figure 1; col. 5, lines 28-30; the control means) from Buffer c3190 appearing on Bus c3200 passes to the Base Encoder c3140 (Figure 1; col. 5; lines 28-30; for determing the target bit rate for the data stream prroduced by the first encoding means). Base Encoder c3140 utilizes this fullness signal to control the data flow into Buffer c3190 according to any method of controlling data flow well known in the art (Figure; col. 5, lines 31-33; to adiust the bit-rate of the the data stream).

Regarding claim 4, Haskell teaches the control means inside Base Encoder c3140 comprises Bufer c3190 and its associated fullness signal c3200 (Figure 1., col. 5, lines 30-31; the control means further comprising a feedback loop), Motion Estimator 170, its output signal, Motion Vector 175, and Subtractor 160 (Figure 18; col. 9, lines 33-37; comparison means), and controller components such as Transformer 270, Quantizer 290, Quantization Adapter 360, Inverse Quantizer 380, Inverse Transformer 400 etc. (Figure 18 ; col. 9, lines 49-56; col. 10, lines 4-7; a controller unit); Base Encoder c3140 utilizes the fullness signal c3200 / c350 (Figures 1 & 18; col.5, lines 30-31; the feedback loop) to control the data flow into Buffer c3190 (Figures 1&18; col. 5, lines 30-31; the feedback loop arranged to transfer information on an estimated actual bit-rate of the data stream to the comparison means);

Haskell further teaches a frame Reorganizer Block ORG 130 reorders the input frames in preparation for coding and outputs the result on Buses 140 and 150 (Figure 18;col. 9, lines 28-30; the comparison means being supplied with a target bit-rate). Subtractor 160 computes the difference between the input frame on Bus 140 and (for P and B types) the prediction frame on Bus 250 (Figure 18; col. 9, lines 47-49; arranged to calculate the difference between the estimated actual bit-rate of the data stream and target bit-rate). The result appears on Bus 260 is transformed by Transformer 270 and quantized by Quantizer 290 into integer values (Figure 18; col. 9, lines 49-51; to provide the calculated difference to the controller unit).

Haskell further teaches Quantized transform coemcients pass on Bus 300 to Variable Encoder 310 and Inverse Quantizer 380 (Figure 18; col. 9, lines 51-53; the controller unit being arranged to output a control sinnal to the one of the first and second encoding means as a response to receiving the calculated difference); and Variable Encoder 310 (Figure 18; col. 10,

lines 16; the one of the first and second encoding means) encodes quantized transform coefficients input on Bus 300, Motion Vector on Bus 305 and quantizer step sizes qs input on Bus 375 into a variable bit-rate bit-stream that is output on Bus 320. (Figure 18; col.10, lines 16-21; to adiust the bit- rate of the data stream according to the received control signal from the controller unit).

Regarding claim 5, Haskell teaches Inverse Quantizer 380 of Base Encoder c3140 (Figure 18; col. 9, line 54; said one of the first and second encoding means) converts the quantized transform coeffients back to full range and passes the result via Bus 390 to Inverse Transform 400, which outputs pel prediction error values on Bus 410 (Figure 18; col. 9, lines 54-60; to adiust quantization of coefficients representing the media signal). Adder 420 adds the prediction error values on Bus 410 to the prediction values on Bus 240 to form the coded base layer pels on Buses 430 and 440. (Figure 18; col. 9, lines 54-60; to adiust quantization of coefficients representing the media siqnal according to the control signal).

Regarding claim 9, Haskell teaches the Base Encoder c3140 (Figure 1; col. 5, line 6; the first encoding means outputs a variable bit-rate coded bit-stream on Bus c3230 (Figure 1; col. 5., lines 6-7., the first encoding means is variable rate encoding means). Being able to output a variable bit-rate coded bit stream, it is inherent that the Base Encoder c3140 must have a set of available encoding algorithms.

Regarding claim 13, Haskell teaches the control means which resides within the Base Encoder c3140 and the Enhancement Encoder c3180 (Figure 1; col. 5; lines 25-30., control means). The fullness signal from Buffer c3190 appearing on Bus c3200 passes to both the Base Encoder c3140 and the Enhancement Encoder c3180 (Figure 1; col. 5; lines 28-30., for

determining a first tarqet bit-rate for first data stream). Base Encoder c3140 utilizes this fullness signal to control the data flow into Bufer c3190 according to any method of controlling data flow well known in the art (Figure 1. col. 5, lines 31-33; according to said control information). The fullness signal from Buffer c3210 appearing on Bus c3225 passes to Enhancement Encoder c3180 (Figure 1., col. 5, lines 34-35., for determining a second target bit-rate for the second data stream). The Enhancement Encoder c3180 utilizes buffer fullness signals, c3200 and c3225, in controlling the data flow into Buffer c3210 (Figure 1., col. 5; lines 40-42., according to the control information).

Regarding claim 14, Haskell teaches that data are read out of Buffer c3190 (Figure 1, col. 5, line 48; a multiplex buffer for storing data) and c3210 (Figure 1, col. 5, line 48., a multiplex buffer for storing data) under the control of System Multiplexer c3250, which combines the two bit streams in preparation for transmission on Channel c3260 (Figure 1; col.5, lines 50-5 ; a multiplexer for transmission). The fullness signal (Figure 1; col. 5., lines 28-30; said occupancy level indicating the current amount of data stored in the multiplex buffer) from Buler c3190 appearing on Bus c3200 passes to both the Base Encoder c3140 and the Enhancement Encoder c3180 (Figure 1; col. 5;lines 28-30., multiplex buffer is connected to the control means for delivering control information indicating the occupancy level).

Regarding claim 15, Haskell teaches that bits are read out of the buffers at a different instantaneous rate that 4 bits are written into the buffers (Col. 5., lines 22-23). Because of this, there is the possibility that overflow or underflow might occur (CoI. 5., Iines 24-25). To alleviate this possibility Buffer c3190 outputs a fullness signal on Bus c3200, and Buffer c3210 outputs a fullness signal on Bus c3225 (Col. 5., lines 25-27). Base Encoder c3140 utilizes this fullness

signal to control the data flow into Bufer c3190 according to any method of controlling data flow well known in the art (Figure 1; col. 5, lines 31-33., to adiust the target bit-rates so that the ratio of the tarnet bit-rates is substantially constant as long as the occupancy level of the buffer is below a certain first threshold).

Regarding claim 16, Haskell teaches that the fullness signal from Bufer c3190 appearing on Bus c3200 passes to both the Base Encoder c3140 and the Enhancement Encoder c3180 (Figure 1; col. 5; lines 28-30., to receive the first control information). The fullness signal from Buffer c3210 appearing on Bus c3225 passes to Enhancement Encoder c3180 (Figure 1,. col. 5, lines 34-35,. to determine the second control information). The Enhancement Encoder c3180 utilizes buffer fullness signals, c3200 and c3225, in controlling the data flow into Buler c3210 (Figure 1; col. 5., lines 40-42., control information indicating a preferred combination of the first and second data streams).

Regarding claim 17, Haskell teaches that the Enhancement Encoder c3180 may utilize the sum of the two fullnesses (Col. 5; lines 42-43; control information indicating a preferred combination of the first and the second data streams). Haskell also teaches that if at any time Buffer c3190 were deemed too full, then Enhancement Encoder c3180 could cease producing data altogether for the enhancement layer, thereby allocating the entire transmission bit-rate to the base layer (Figure 1; col. 5; lines 44-47; determine a preferred ratio of the target bit-rate of the first data stream and the tarnet bit-rate of the second data stream).

Regarding claim 18, Haskell teaches Base Encoder c3140 also outputs a replica decoded base layer video signal on Bus c3150 (Figure 1., col. 5, lines 8-10., comprising decoding means for decoding the data stream into a decoded signal), which passes to a Spatial Interpolator c3160.

Haskell also teaches (Figure 18) ORG 470 reorders the high-resolution video frames to match the order of the base layer and outputs the result on Bus 480 (Figure 18., col. 19, lines 27-29., said second encoding means are arranged to encode a difference signal). Subtractor 490 computes the difference between the input picture (the media signal) on Bus 480 that is to be coded and a spatial prediction picture (the decoded sinal) on Bus 460 (Figure 18., col. 10, lines 29-31; the difference between the media signal and the decoded signal. The prediction error is output on Bus 500 transformed by Transformer 510, quantized by Quantizer 530 and passed via Bus 540 to Variable Encoder 550 (Figure 18., col. 10, lines 31-34, the second encodinq means producing the second data stream having the second bit- rate).

Regarding claim 22, Haskell teaches a scalable encoder (Figure 1; col. 4, line 59; a scalable encoderj for encoding progressive high resolution video (Figure 1; col. 5; line 1., for encoding a media signal comprising a Base Encoder c3140 which outputs a variable bit-rate coded bit-stream on Bus c3230 (Figure 1;col. 5, line 6., the first encoding means is a base layer video encoding means) and an Enhancement Encoder c3180 which outputs a variable bit-rate coded bit-stream on Bus c3250 (Figure 1; col. 5, line 12., the second encodinu means comprises at least one enhancement layer video encoding mean).

Regarding claim 25, Haskell teaches that the progressive high resolution video enters the circuit of C3 on Bus c3100 and passes to a Spatial Decimator c3120, where it may be low-pass filtered before reducing the number of pels to a lower base-layer resolution (Figure 1; col. 5, lines 1-4; an input element for inputting preference information). The decimated base layer video is then output on Bus c3130 and passes to a Base Encoder c3140, which outputs a typically variable bit-rate coded bit-stream on Bus c3230 (Figure 1., col. 5, lines 4-7). Enhancement

Encoder c3180 utilizes the upsampled video on Bus c3170 as a prediction (Figure 1., col. 5, lines 15-18; the preference information being delivered as control information to the control means), in order to increase the efficiency of coding the full resolution progressive video input on bus c3100 (Figure 1; col. 5, lines 15-18., for inputting preference information indicating a preferred combination of the first data stream and the second data stream).

Regarding claim 32, Haskell does not teach whether the spatially scalable encoder is H.324 compatible or not. However, Haskell teaches the spatially scalableencoder is for the HDTV, a multimedia terminal. It would have been obvious to one skilled in the art to implement the system to be H.324 compatible since H.324 is the industrial standard for handling the streaming audio and video data.

Allowable Subject Mater

Claims 6-8, 10-12, 19-21, 23, 26-31, 34 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten inindependent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed on 7/132/05 have been fully considered but they are not persuasive.

In claims 1, 24 and 33, Applicant argues, on the Remark, page 2, that Haskell does not disclose determing a target combination of the first data stream aand the second data stream in the third data stream according to the control information , and to adjust the combination of the first data stream and the second data stream in the third data stream by affecting the first and the second bit rates.

Examiner does not agree since Haskell discloses, in fig.1, base encoder c3140 (first encoder) is coupled to an enhance ment encoder c3180 via bus c3200. The base encoder controls the fullness of buffer c3190 via control signal on bus c3200. The enhance ment encoder also controls the fullness of buffer c3210 via control signal on bus c3225. The fullness signal from Buffer c3190 appearing on Bus c3200 passes to both the Base Encoder c3140 and the Enhancement Encoder c3180 which controls both encoders; and the fullness signal on bus c3200 is a control information exchanging between the base conder and the enhancement coder. See col.5, lines 20-35.

As described by applicant in specification, page 11, lines 22-31, and according to the disclosure of Haskell. Examiner believes both the base encoder and enhancement encoder of Haskell are controled by fullness signal on bus c3200.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 571 272 3092. The examiner can normally be reached on Monday-Friday from 8:30 to 4:30. The examiner can also be reached on alternate

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan, can be reached on 571 272 3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hanh Nguyen

HNguyen

October 13, 2005

HANH NGUYEN
PRIMARY EXAMINER